



Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200
Fax 613 632-5246

Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name
PO040873	TWM001-VU	1	1	Net 30	M304P0.675W.091	304/316 Pipe .675 OD x .091 Wall Thickness : MATERIAL: TP304/TP316 STAINLESS STEEL SEAMLESS PIPE AS PER ASTM A312/ASME SA312 receive ft				60	9/10/2018	70		S108840	Stock	9/10/2018	\$ 5.00 / ft	0		\$347.50	TW Metals
		2			M304TR0.750W.049	304 Round Tube .750 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft				260		260		S108841	Stock	9/10/2018	\$ 2.58 / ft	0		\$670.54	TW Metals
		3			M6061T6T0.375W.058	6061-T6 Round Tube .375 X .058W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft				60		60		S108842	Stock	9/10/2018	\$ 2.64 / ft	0		\$158.42	TW Metals
		4			M6061T6T0.625W.065	6061-T6 Round Tube .625 X .065W : MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ-A-225/8 OR AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft						60		S108843	Stock	9/10/2018	\$ 3.15 / ft	0		\$188.99	TW Metals
										Total:		440								\$1,365.46	



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO040873

Supplier: TWM001-VU
TW Metals
PO Box 933014
Atlanta, GA 31193-3014 USA
Phone: 585 768 5600
Fax: 585 768 5601

PO No: PO040873

PO Date: 8/29/18

Due Date: 9/7/18

**Purchase Order
Revision:**

Revision Date:

Ship-To Contact: Lavoie, Chantal
clavoie@dartaero.com

E-MAILED
AUG 29 2018

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground

Pynt Terms: Net 30

Freight Terms:

Special Comments:

Items												
Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1 AT		M304P0.675W.091		304/316 Pipe .675 OD x .091 Wall Thickness : MATERIAL: TP304/TP316 STAINLESS STEEL SEAMLESS PIPE AS PER ASTM A312/ASME SA312 receive ft	Firmed	-	9/7/18	60 ft	0 ft	60 ft	\$5.00/ft	\$300.00
								✓ 69.54			SEP 10 2018	
2 AT		M304TR0.750W.049		304 Round Tube .750 X .049W : MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING AS PER ASTM A213 OR ASME SA213 OR ASTM A269 receive ft	Firmed	-	9/7/18	260 ft	0 ft	260 ft	\$2.579/ft	\$670.54
								✓ 260.54			SEP 10 2018	
3 AT		M6061T6T0.375W.058		6061-T6 Round Tube .375 X.058W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ- A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	-	9/7/18	60 pcs	0 pcs	60 pcs	\$2.6404/pcs	\$158.42
								✓ 60.54			SEP 10 2018	

Items												
Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
4	✓ Ar	M6061T6T0.625W.065		6061-T6 Round Tube .625 X.065W : MATERIAL: 6061- T6/T62/T6510/T6511 SEAMLESS TUBING AS PER WW-T-700/8 OR QQ-A-200/8 OR QQ- A-225/8 OR AMS 4080 OR AMS 40 82 OR AMS 4083 OR ASTM B210 OR ASTM B241 receive ft	Firmed	-	9/7/18	60 ft	0 ft ✓ 60ft	60 ft	\$3.1499/ft	\$188.99
Grand Total:												\$1,317.96

Order Notes

Procurement Quality Clauses

A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)
A026 certification of material conformance
A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 8/29/18 10:39 AM dart.lavoie.chantal



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 80956538 FROM: CHIC PAGE 1

CUST NUMBER: 1203820 NET WGT: 147.263 REQ.DATE: 09/07/18 CONFIRMED
SOLD TO: SHIP TO:
DART AEROSPACE LTD DART AEROSPACE LTD
1270 ABERDEEN ST 1270 ABERDEEN ST
HAWKESBURY ON HAWKESBURY ON
CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 08/31/18
TERMS: NET 30 DAYS VIA: COMMON CARRIER
F.O.B.: SHIPPING POINT FREIGHT: PREPAID
CUST ORD NO.: PO40873 RELEASE NO.:
RECEIVING PHONE:

LINE	ITEM DESCRIPTION	WIDTH	LENGTH
0001	38420 SMLS 304/L A-312 3/8 SCH 40		17/24 FT

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	60.000 FT	69.500 FT	69.500 FT	39.813	3

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00
PO:49383265 HT:11P046 AT PC: 3 CUSTOMER QTY: UOM
MLT:CHINA MFG:CHINA SLB/CL:LWMK92

0002 36860 SMLS CD 304/L A269 3/4 OD X .049 WA 20' CL

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	260.000 FT	260.000 FT	260.000 FT	95.347	13

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR Expiration Date: 0/00/00
PO:49370276 HT:N170711AS10 AT PC: 13 CUSTOMER QTY: UOM
MLT:CHINA MFG:CHINA SLB/CL:-

0003 41952 D6061-T6 3/8 OD X .058 WA 12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	60.000 FT	60.000 FT	60.000 FT	4.068	5

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00
PO:49390065 HT:F002723160001 AT PC: 5 CUSTOMER QTY: UOM
MLT:UNITED STATES MFG:UNITED STATES SLB/CL:226215

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



Packing Slip

ORDER NO.: 80956538 FROM: CHIC PAGE 2

CUST NUMBER: 1203820 NET WGT: 147.263 REQ.DATE: 09/07/18 CONFIRMED
 SOLD TO: SHIP TO:
 DART AEROSPACE LTD DART AEROSPACE LTD
 1270 ABERDEEN ST 1270 ABERDEEN ST
 HAWKESBURY ON HAWKESBURY ON
 CANADA CN K6A 1K7 ONTARIO CANADA CN K6A 1K7

SALESPERSON: DONNA SMALLEY SHIP BY: 08/31/18
 TERMS: NET 30 DAYS VIA: COMMON CARRIER
 F.O.B.: SHIPPING POINT FREIGHT: PREPAID
 CUST ORD NO.: PO40873 RELEASE NO.:
 RECEIVING PHONE:

LINE	ITEM DESCRIPTION	WIDTH	LENGTH
0004	42558 D6061-T6 5/8 OD X .065 WA		12 FT ML

CLN#	ORD QTY	INVOICE QTY	SHIPPED QTY	WT	PCS
	60.000 FT	60.000 FT	60.000 FT	8.035	5

** 1 TEST REPORTS REQUIRED **
 ** 1 CERTS REQUIRED **

ECCN: EAR99 Export License: NLR Expiration Date: 0/00/00
 PO:49389811 HT:F002710260001 PC: 5 CUSTOMER QTY: UOM
 MLT:UNITED STATES MFG:UNITED STATES SLB/CL:226182

BROKERS KUEHNE AND NAGEL LTD

AREA		TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT
YRC	REDDICRATE	1.000	84.000	3.0000	293.0000	3	
						CUBIC FT	1.5260
		1.000	84.000				

BY: CS
 RT 000-

UNLOAD TYPE: NONE SPECIFIED

DATE SHIPPED _____

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
 PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
 REVIEW.
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



**Packing
Slip**

ORDER NO.: 80956538

FROM: CHIC

PAGE 3

CUST NUMBER: 1203820	NET WGT: 147.263	REQ.DATE: 09/07/18	CONFIRMED
SOLD TO:	SHIP TO:		
DART AEROSPACE LTD	DART AEROSPACE LTD		
1270 ABERDEEN ST	1270 ABERDEEN ST		
HAWKESBURY ON	HAWKESBURY ON		
CANADA	CN K6A 1K7	ONTARIO CANADA	CN K6A 1K7

SALESPERSON: DONNA SMALLEY	SHIP BY: 08/31/18
TERMS: NET 30 DAYS	235 TUBEWAY
F.O.B.: SHIPPING POINT	CAROL STREAM IL 60188
CUST ORD NO.: PO40873	
VIA: COMMON CARRIER	
FREIGHT: PREPAID	
RELEASE NO.:	
RECEIVING PHONE:	

"TW Metals MSDS data is available on our web site at www.twmetals.com. MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

"CERTIFICATE OF CONFORMANCE"

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

Electronically Generated Document-Valid Without Signature Date: 8/30/18

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL REVIEW.
<http://www.twmetals.com/invoice-terms.html>

Customer: TWMEXT PO#:M49383265 SO#:LWMK92

MTR#:WLPSRW104038.GIF

Item:S44L00C Bundle:WLRW104TA82-12 Heat#:11P046

Item:S44L00C Bundle:WLRW104TA82-15 Heat#:11P046

WLPSRW104038



PO# M49383265 AG 011118

MILL INSPECTION CERTIFICATE

EN 10204 3.1

CHANGSHU WALSHIN SPECIALTY STEEL CO.,LTD.

CUSTOMER: TA CHEN STAINLESS PIPE CO.,LTD.		HEAT NO.: 11P046	
DATE: 20171106		SPECIFICATION: ASTM A312/A316-14/ASME SA312-5,SA316-15	
COMMODITY: STAINLESS STEEL SEAMLESS PIPE		CERTIFICATE NO.: 201711063008205	
DELIVERY CONDITION: COLD FINISHED SOLUTION ANNEALED AND PICKLED		GRADE: TP30400L	

CHEMICAL COMPOSITION (WT%)																												
ELEMENTS	C	Si	Mn	P	S	Ni	Cr	Mo	N	Cu	Ti	Nb	Mo-Ta	Co	V	B	Al	Sb	Pb	As	Sn	Fe	B	Zr	Al+Ti	PbEN	Fertile content	
SPECIFICATION	min	0.030	0.070	0.005	0.005	0.005	18.000																					
	max	0.035	0.750	2.000	0.045	0.030	20.000																					
RESULTS	0.023	0.420	0.910	0.027	0.010	9.000	18.250	0.130		0.392																		

SIZE OD(T) x WT(sch) x LG(mm)	PACKAGE NO.	PIECES	WEIGHT		TS MPa	VS		EL(50mm) %	HARDNESS HFB	FLATTENING TEST	FLARING TEST	I.C. TEST	PITTING CORROSION (mg/dm ² .day)	GRAIN SIZE	Lo No.	HYDROSTATIC TEST MPa	EDDY CURRENT TEST	ULTRASONIC TEST
			kg	lb		0.2%	1%											
38"X5"606-7315	T482-11	132	3070.47	1015	600.005	301201	/	63.568.5	7079	GOOD	/	GOOD	/	/	201709-LG-F31	/	GOOD	/
38"X5"606-7315	T482-12	19	436.22	114	616.610	302290	/	67.668	8079.5	GOOD	/	GOOD	/	/	201709-LG-F41	/	GOOD	/
14"X5"606-7315	T482-13	56	2233.07	546	612.607	317268	/	65.64	8079	GOOD	/	GOOD	/	/	201709-LG-C82	/	GOOD	/
38"X5"606-7315	T482-15	25	574.15	149	616.610	302290	/	67.668	8079.5	GOOD	/	GOOD	/	/	201709-LG-F41	/	GOOD	/
14"X5"606-7315	T482-16	43	985.96	245	612.597	317268	/	65.64	8079	GOOD	/	GOOD	/	/	201709-LG-C82	/	GOOD	/
TOTAL:		315	7301.87	2069														

TW METALS REPORTS

TESTED JAN 11 19

ACCEPTED BY *[Signature]*

Remarks:

NACE MR0175-2003

AS PER PROFORMA INVOICE NO.15354-S

I.C. TEST PER ASTM A262-62a E ML-P2016913 ML-P1140

NO REPAIR BY WELDING

NATURAL FREE FROM MERCURY CONTAMINATION

COUNTRY OF ORIGIN: CHINA, COUNTRY OF MANUFACTURE: CHINA

ET STANDARD PRACTICE: ASTM E426

REFERENCE DISCONTINUITY: DRILLED HOLE

WATER QUENCHED ANNEALING TEMPERATURE: 1060°C

FREE OF RADIATION

1. WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE RESULTS OF THE CONTRACT, AND CONFORM TO THE SPECIFICATION ABOVE.

2. MATERIAL FREE FROM MERCURY CONTAMINATION AND RADIOACTIVE CONTAMINATION.

3. NO REPAIR BY WELDING.

4. THE CERTIFICATE SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN APPROVAL OF THE COMPANY.

Sam Pin

QUALITY MANAGER

ADDRESS: #1 HAYING ROAD, HAYU TOWN, CHANGSHU CITY, JIANGSU PROVINCE, CHINA 21510 TEL: +86-512-9558260 FAX: +86-512-9558267

B-2 CS-QM-10000-02E-0201

SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL TP304 TP316 STAINLESS STEEL SEAMLESS PIPE

SPECIFICATION:

ASTM A312 / ASME SA312

PART NUMBER:

M304PD.DDD|W|TTT
OD | WALL THICKNESS

WHERE "D.DDD" = OUTSIDE DIAMETER IN INCHES PER NPS DESIGNATION (REF TABLE 1)
AND "TTT" = WALL THICKNESS IN INCHES PER PIPE SCHEDULE (REF TABLE 1)

EG. 3/8 SCHEDULE 40 PIPE = M304P0.675W.091

TABLE 1: DIMENSIONS OF NPS PIPE (REF ANSI B36.10/19)

NPS Designation	Outside Diameter (in)	Pipe Schedule Wall Thickness (in)	
		SCHEDULE 40	SCHEDULE 80
1/8	0.405	0.068	0.095
1/4	0.540	0.088	0.119
3/8	0.675	0.091	0.126
1/2	0.840	0.109	0.147
3/4	1.050	0.113	0.154
1	1.315	0.133	0.179
1-1/4	1.660	0.140	0.191
1-1/2	1.900	0.145	0.200
2	2.375	0.154	0.218
2-1/2	2.875	0.203	0.276
3	3.500	0.216	0.300
3-1/2	4.000	0.226	0.318
4	4.500	0.237	0.337

RELEASED

2017 JUN 19
5CN 17-510

APPROVED

A	NEW ISSUE	DESCRIPTION	CP	BY	DATE
REV.					
DESIGN	CP	DART AEROSPACE LTD			
DRAWN	CP	HAWKESBURY, ONTARIO, CANADA			
CHECKED	ML	DRAWING NO.			
MFG. APPR.	DO	M304P			
APPROVED	WM	TITLE			
DE APPR.	CP	304/316 PIPE			
DATE	17.02.24	SHEET 1 OF 1			
		SCALE			
		NTS			

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NOT TO BE USED FOR ANY PURPOSE OR IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF DART Aerospace Ltd.

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304P0.675W.091
 DATE: 18/09/10

PO / BATCH NO.: P0040873/5108840

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 69.5ft
 QUANTITY INSPECTED: 69.5ft
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.675"
 THICKNESS RECEIVED: 0.675"
 SHEET SIZE ORDERED: —
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N	
CORRECT FINISH	<input checked="" type="radio"/> Y N	
CORROSION	Y <input checked="" type="radio"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y N	ASTM A312
CORRECT THICKNESS	<input checked="" type="radio"/> Y N	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y N	HT: 11P046
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y N	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT</u>	SIGNED OFF BY: _____
DATE: <u>18/09/10</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MISCO

JIAXING MT STAINLESS STEEL CO.,LTD

MILL TEST CERTIFICATE

EN10204 3.1 CERTIFICATE

ISO 9001: 2008 TUV SUD CERT REGISTRATION No.: 01 100 095954

PED/97/23/CE EURO CERT CERTIFICATE NO:CN.CE.1110S1-02/14



Precisely Right.

CERTIFICATE NO.: 17MTC-102310

SALES CONTRACT NO.: M 49370276

COMMODITY: STAINLESS STEEL SEAMLESS PIPE

SPECIFICATION: ASTM A213-15c ASTM A269-15a, ASME SA213-15 AVG WALL

PURCHASER: KASUGAI CO., LTD.

ORDER: M 49370276

DATE OF REPORT: 2017-10-17

Steel Grade	Heat No.	Dimensions			Quantity		Process	Delivery Condition	Macroscopic Inspection	
		O.D. (INCH)	W.T. (INCH)	Length (FT)	FT	Piece			End Cut	Appearance
TP304L	N170711AS10	3/4	0.049	20	5500	275	Cold-Drawn	Annealed & Pickled & 320 Grit min	Passed	Passed

Chemical Composition (W.T. %)

Element	C	Si	Mn	P	S	Cr	Ni	Mo	Ti	-	-	-
Requirements	≤0.035	≤1.00	≤2.00	≤0.045	≤0.030	18.0-20.0	8.0-12.0	-	-	-	-	-
Ladle Analysis	0.017	0.34	1.32	0.027	0.001	18.13	8.01	-	-	-	-	-

Mechanical Properties

Test Item	Y.S. (MPa)		T.S. (MPa)		EL. (%)		Reduction of Area		Hardness		Cold Bend Test		Flaring Test		Flattening Test		P.M.I. TEST
	Rm	≥170	Rm	≥485	In2in	≥35	Z (%)	-	HRB	≤80	-	Passed	-	-	e=0.09	-	
Test Results	260		625		55		-		76		Passed		Passed		Passed		Passed

Non Destructive Tests

Test Item	Eddy Current Test	
	ASTM E 426	
	Passed	

Remarks:

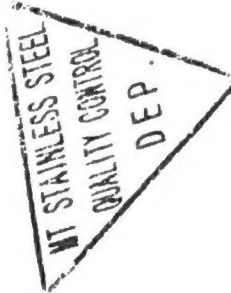
- ASTM A213-15c ASTM A269-15a, ASME SA213-15 AVG WALL
- PIPES TESTED PER ASTM A1016
- SOLUTION HEAT TREATMENT: 1050 °C X 1.5m/min
- NO WELD REPAIR WAS PERFORMED
- PMI TESTING DONE ON EACH PIPE - SATISFACTORY
- IN COMPLIANCE WITH NACE MR0175/ISO 15156-2015
- FREE FROM MERCURY CONTAMINATION
- MATERIAL IS FREE FROM RADIOACTIVITY
- VISUAL CHECK IS SATISFACTORY
- COUNTRY OF ORIGIN: CHINA
- COUNTRY OF MELT: CHINA

1. WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND THE TEST RESULTS ARE IN COMPLIANCE WITH THE TERMS OF THE PURCHASE ORDER OR CONTRACT

2. THE CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE COMPANY.

Prepared by:

Approved by:



SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SEAMLESS ROUND TUBING

SPECIFICATION:

ASTM A213 OR ASME SA213 OR ASTM A289

WALL THICKNESS TOLERANCE PER ASTM A289 AS FOLLOWS

OD (IN)	PERMISSIBLE OD TOL (IN)	PERMISSIBLE WALL TOL
UP TO 1/2	±0.005	±15%
1/2 TO 1 1/4 EXCL.	±0.005	±10%
1 1/4 TO 3 1/2 EXCL.	±0.010	±10%
3 1/2 TO 5 1/2 EXCL.	±0.015	±10%
5 1/2 TO 8 EXCL.	±0.030	±10%

PART NUMBER

M304TR1D DDD W. TTT
OD | WALL

WHERE "D DDD" = OUTSIDE DIAMETER IN INCHES
AND "TTT" = WALL THICKNESS IN INCHES

EG. 0.375" OD X 0.065" WALL TUBING = M304TR0 375W 065

RELEASED
08/10/20

B		REFORMAT DWG. ADD SPECS (N D8 1)		CP	08 10 20
A		NEW ISSUE		DS	01 05 09
REV	DESCRIPTION	DATE			
DESIGN					
DRAWN					
CHECKED					
MFG APPR					
APPROVAL					
DATE	08 10 20				
DART AEROSPACE LTD HAWKESBURY ONTARIO CANADA DRAWING NO M304TR SHEET 1 OF 1 SCALE 304/316 ROUND TUBING NTS COPYRIGHT © 2011 BY DART AEROSPACE LTD					

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TR0.750W.049
 DATE: 18/04/10

PO / BATCH NO.: P0040873/S108841

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 260ft
 QUANTITY INSPECTED: 260ft
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.750"
 THICKNESS RECEIVED: 0.750"
 SHEET SIZE ORDERED: —
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(Y) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(Y) N	
CORRECT MATERIAL PER M-DRAWING	(Y) N	ASTM A213
CORRECT THICKNESS	(Y) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(Y) N	HT: N170711AS10
CORRECT MATERIAL IDENTIFICATION	(Y) N	
CORRECT M# ON THE MATERIAL	(Y) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (If required)
INSPECTED BY: <u>Ar</u> DATE: <u>18/04/10</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

KAISER ALUMINUM

FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49390065-1		CUSTOMER PART NUMBER: 41952		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 226215	LINE ITEM: 001	SHIP DATE: 06/19/2018	KAISER LOT NUMBER: F00272316	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 500.000 LB	QUANTITY: 616.000 PCS	B/L NUMBER: 230024	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO: TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			SOLD TO: TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

Actual Physical Properties

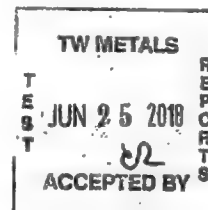
REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON%IACS	BEND
F00272316	0001	0001	48.3	40.5	18.5	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D21579	.58	.26	.22	.05	.96	.09	.05	.02	.00	.00	.00	.01	.02

Applicable Requirements:

Description: OD: 0.3750"; Wall: 0.0580"; Round @
AMS4082P AMS-WW-T-700/6C ASTM B210-12
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.
This Product Complies to FAR BAA, DFARS BAA, FAR TAA
COMPLIES TO DIN EN 10204 JAN 2005
No Weld Repair. Mercury Free.



Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5
TRADE AGREEMENTS).

Plant Serial: 00028687
Kaiser Order Number: 226215
Line Item: 001

KAISER

ALUMINUM

FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

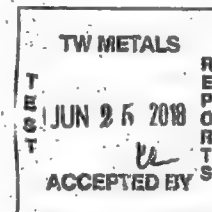
KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager

[Signature]

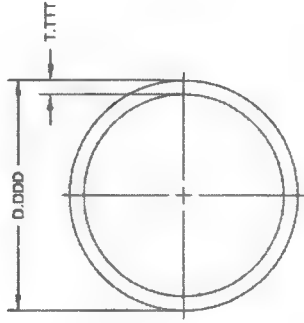


PURCHASE MATERIAL: 6061-T6/B210/T6510/T6511 SEAMLESS TUBING

SPECIFICATION: WW-T-70008
OR QQ-A-200/8 OR QQ-A-225/8
OR AMS 4080 OR AMS 4082 OR AMS 4083
OR ASTM B210 OR ASTM B241

PART NUMBER: M6061T6T1P.DDD|WT.TTT
OD WALL

WHERE "D.DDD" = OD IN INCHES
"T.TTT" = WALL THICKNESS
EG. 3/8" OD X 0.056 WALL = M6061T6T0.375W0.056
MATERIAL TOLERANCE: PER ANSI H35.2



RELEASED
2013-07-02

C	COMPLETE REFORMAT, ADDED T6510 & T6511. ADDED AMS 4083, ASTM B210 & ASTM B241 ADDED MATERIAL TOLERANCE	AJS	13.06.12
B	ADD QQ-A-200/8 & QQ-A-225/8	CP	04.01.23
A	NEW ISSUE	DS	01.06.21
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS		
DRAWN	AJS		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR			
DATE	13.06.12		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. M6061T6T			
REV. C SHEET 1 OF 1			
TITLE 6061-T6 TUBING			
SCALE NTS			
DATE 13.06.12			
COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS UNCLASSIFIED AND IS NOT CONTROLLED BY THE DART AEROSPACE LTD INFORMATION SECURITY POLICY			

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061 T6 T0.375W.058

PO / BATCH NO.: P0040873/S108842

DATE: 18/09/10

MATERIAL CERT REC'D: Yes

THICKNESS ORDERED: 0.375"

QUANTITY RECEIVED: 604t

THICKNESS RECEIVED: 0.375"

QUANTITY INSPECTED: 604t

SHEET SIZE ORDERED: —

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	ASTM B210
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	MT: F002723160001
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT</u>	SIGNED OFF BY: _____
DATE: <u>18/09/10</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

KAISER ALUMINUM

FABRICATED PRODUCTS

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

CUSTOMER PO NUMBER: M49389811-1		CUSTOMER PART NUMBER: 42558-144		PRODUCT DESCRIPTION: Drawn Seamless Tube/Pipe	
KAISER ORDER NUMBER: 226182	LINE ITEM: 001	SHIP DATE: 06/05/2018	KAISER LOT NUMBER: F00271026	ALLOY: 6061	TEMPER: T6
WEIGHT SHIPPED: 615.000 LB	QUANTITY: 382.000 PCS	B/L NUMBER: 229872	DIAM/DAF/THKNS: 	WIDTH: 	LENGTH: 12.000 FT
SHIP TO: TW METALS INC 235 WEST TUBEWAY DRIVE CAROL STREAM, IL 60188 USA			SOLD TO: TW METALS INC 760 CONSTITUTION DRIVE SUITE 204 EXTON, PA 19341 USA		

Actual Physical Properties

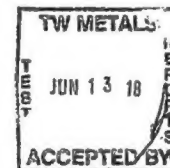
REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	ELONG%	HARDNESS	CON% IACS	BEND
F00271026	0001	0001	46.5	39.3	21.5	N/A	N/A	N/A
F00271026	0002	0001	48.4	41.0	20.0	N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
D21580	.58	.27	.21	.05	.98	.09	.05	.03	.00	.00	.00	.01	.02
D21416	.60	.28	.23	.05	.95	.10	.06	.03	.00	.00	.00	.01	.02

Applicable Requirements:

Description: OD: 0.6250"; Wall: 0.0650"; Round @
AMS4082P AMS-WW-T-700/6C ASTM B210-12 WW-T-700/6F
WE TAKE EXCEPTION TO PARA. 5.2.1., Per AMS4082P, WAS NOT OILED.
This Product Complies to FAR BAA, DFARS BAA, FAR TAA
COMPLIES TO DIN EN 10204 JAN 2005
No Weld Repair. Mercury Free.



Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA
MATERIAL COMPLIES WITH FAR BAA (FAR 52.225-1, BUY AMERICAN ACT- SUPPLIES), DFARS BAA
(DFARS 252.225-7001 BUY AMERICAN ACT & BAL OF PAYMENTS PROG), AND FAR TAA (FAR 52.225-5
TRADE AGREEMENTS).

Plant Serial: 00028537
Kaiser Order Number: 226182
Line Item: 001

KAISER

ALUMINUM

FABRICATED PRODUCTS



CERTIFIED TEST REPORT

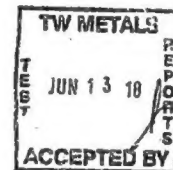
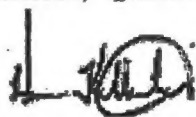
<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
6573 W. WILLIS ROAD
CHANDLER, AZ 85226

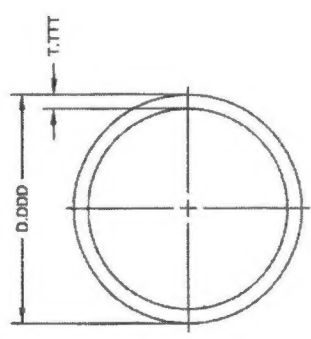
CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ('Kaiser') hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms & conditions of sale. Test reports are on file subject to examination.

Hans Kattentidt, Quality Manager



Plant Serial: 00028537
Kaiser Order Number: 226182
Line Item: 001



PURCHASE MATERIAL: 6061 T6/T62/T6510/T6511 SEAMLESS TUBING
 SPECIFICATION: WW-T-7008
 OR QQ-A-250/8 OR QQ-A-225/8
 OR AMS 4080 OR AMS 4082 OR AMS 4083
 OR ASTM B210 OR ASTM B241
 PART NUMBER: M6061T6T D.DDD/W.T. TTT
 OD WALL
 WHERE "D.DDD" = OD IN INCHES
 "T.TTT" = WALL THICKNESS
 EG. 3/8" OD X 0.058 WALL = M6061T6T0.375W0.058
 MATERIAL TOLERANCE: PER ANSI H35.2

RELEASED
 2013-07-02

C	COMPLETE REFORMAT. ADDED T6510 & T6511. ADDED AMS 4083, ASTM B210 & ASTM B241 ADDED MATERIAL TOLERANCE	AJS	13.06.12
B	ADD QQ-A-250/8 & QQ-A-225/8	QP	04.01.23
A	NEW ISSUE	DS	01.06.21
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS		
DRAWN	AJS		
CHECKED	W		
MFG. APPR.	M6061T6T		
APPROVED	W		
DE APPR.	W		
DATE	13.06.12		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. M6061T6T SHEET 1 OF 1 TITLE 6061-T6 TUBING SCALE NTS DATE 13.06.12 COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DRAWING IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED ONLY FOR THE PURPOSES SPECIFIED AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING.			

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061 T6 TD.625W.065

PO / BATCH NO.: P0040873/S108843

DATE: 18/09/16

MATERIAL CERT REC'D: Yes

THICKNESS ORDERED: 0.625"

QUANTITY RECEIVED: 60ft

THICKNESS RECEIVED: 0.625"

QUANTITY INSPECTED: 60ft

SHEET SIZE ORDERED: —

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	Y	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL PER M-DRAWING	(Y)	N	ASTM B210
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT REF # TO LINK CERT	(Y)	N	HT: F002710260001
CORRECT MATERIAL IDENTIFICATION	(Y)	N	1
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT</u>	SIGNED OFF BY: _____
DATE: <u>18/09/16</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in